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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,673	04/28/2006	Bruce Halcro Candy	04465/022001	8479

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EXAMINER

WHITTINGTON, KENNETH

ART UNIT	PAPER NUMBER
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2862

NOTIFICATION DATE	DELIVERY MODE
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10/20/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/577,673	Applicant(s) CANDY, BRUCE HALCRO	
	Examiner KENNETH J. WHITTINGTON	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-8 is/are allowed.
- 6) ☒ Claim(s) 1 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment filed August 14, 2008 has been entered and considered.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Candy (US4942360). Regarding claim 9, Candy discloses

Regarding claim 9, Candy discloses a method of detection of metal for use in environments of varying magnetic permeability, including generation of a search signal wherein a ratio of reactive transmit voltages at each of at least two frequencies is substantially constant for a selected range of transmit coil effective inductive component impedance (See FIG. V, note each of items 72, 82 and 83 produce constant reactive transmit voltages a differing frequencies, thus a ratio of these voltages would be constant as well).

Regarding claim 10, Candy discloses the search signal is selected such that the reactive transmit voltage is approximately constant for at least a time period during which a magnetic field signal returned from a search environment is being received (See col. 9, line 11 to col. 10, line 53, particularly col. 9, lines 28-35).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Candy in view of Candy (US5576624), hereinafter Candy II.

Regarding claim 1, Candy teaches a transmit coil adapted to transmit an alternating magnetic field associated with a reactive transmit voltage (See Candy FIG. V, item 66);

transmit electronics adapted to generate a transmit voltage signal which is applied to the transmit coil (See circuitry shown in lower portion of FIG. V); and

receive electronics adapted to receive a magnetic field signal and process received signals to produce an indicator output (See FIG. V, receive coil 120 and receive electronics associated therewith),

wherein the transmit voltage signal is selected such that the reactive transmit voltage is approximately constant for at least a time period during which a magnetic field signal to be processed is received by the receive electronics (See col. 9, line 11 to col. 10, line 53, particularly col. 9, lines 28-35).

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However, Candy does not explicitly teach a timing control circuit. Candy II teaches a metal detection apparatus comprising transmit electronics and receive electronics wherein a timing of both the transmit and the receive electronics are controlled by a timing control circuit (See Candy II, note transmit electronics 2 and 3 and receive electronics 1 and 4-11 and timing control circuit 32). It would have been obvious at the time the invention was made to incorporate the timing control circuit of Candy II into the apparatus of Candy. One having ordinary skill in the art would do so to control the operation of the transmit and receive electronics (See Candy II col. 17, lines 1-22).

Regarding claim 11, this combination teaches a method of detection of metal for use in environments of varying magnetic permeability, including the use of an electronic metal detector as claimed in claim 1 (See discussion of claim 1 above and rest of disclosure of Candy).

Allowable Subject Matter

Claims 2-8 are allowed.

The following is an examiner's statement of reasons for allowance: they are allowed for those reasons outlined in the Office Action mailed May 15, 2008.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection. The new grounds were required in view of the amendments thereto to include features relating to a timing control circuit.

Applicant's arguments with respect to claims 9 and 10 have been fully considered but they are not persuasive. Applicant's primary argument is that Candy does not show or suggest the ratio of these reactive voltages would not be constant for a selected range of inductive component impedances. However, as noted in the rejection and Candy at col. 9, line 11 to col. 10, line 66, Candy discloses a circuit for keeping the reactive voltage across the transmit coil constant for each frequency. This voltage is kept constant in response to changes in the current measured through the transmit coil via a demodulator switch 77 and a voltage across the transmit coil via a phase locked loop 88. Thus, in response to varying impedance, i.e., a selected range of impedances of the transmit coil and components connected thereto; this reactive voltage can be kept constant at each frequency to allow the resistive voltage to vary for the apparatus to detect the metals of interest. Furthermore, a ratio of two of these reactive voltages at two of these frequencies would thus be constant since each voltage is constant.

In this assertion Applicants also state that Candy does not maintain this constant reactive voltage "under varying inductive component impedances" and also states "a search signal is varied in the practice of the present invention". However, the step of

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"varying" this search signal is not claimed and such arguments related thereto will not be considered until claimed.

Accordingly, the rejections of claims 9 and 10 stand.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **KENNETH J. WHITTINGTON** whose telephone number is (571)272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth J Whittington/
Primary Examiner, Art Unit 2862